

ABSTRACT

A dielectric film (91) made of CF is deposited on a substrate. A protective layer comprising an SiCN film (93) is
5 formed on the dielectric film (91). A film (94) serving as a
hardmask made of SiCO is deposited on the protective layer by
a plasma containing active species of silicon, carbon, and
oxygen. When the protective layer is formed, an SiC film (92)
is deposited on the dielectric film (91) by a plasma containing
10 active species of silicon and carbon, and thereafter the SiCN
film (93) is deposited on the SiC film (92) by a plasma
containing active species of silicon, carbon, and nitrogen.